

IN THE CLAIMS:

1. (currently amended) A method for installing an ignition module for a flame burner to an electrical system, the electrical system including a phase conductor, a neutral conductor, an isolation transformer, and the ignition module, the ignition module including first and second inputs and a single output, said method comprising:

coupling the phase conductor and neutral conductor to a primary winding of the isolation transformer;

connecting the electrically isolated phase conductor from the isolation transformer to the first input of the ignition module;

connecting the electrically isolated neutral conductor from the isolation transformer to the second input of the ignition module;

connecting a ground conductor between the electrically isolated neutral conductor and a ~~burner~~; and burner;

creating a return path for passing a current via a flame output from the burner and via the ground conductor to the electrically isolated neutral conductor; and

connecting the single output to an igniter.

2. (canceled)

3. (currently amended) A method in accordance with ~~Claim 13~~Claim 1 wherein the transformer includes a secondary winding, said method further comprising connecting the secondary winding to the first input of the ignition module and to the ground conductor.

4. (original) A method in accordance with Claim 3, the transformer including a primary winding, said method further comprising connecting the primary winding to the phase conductor and the neutral conductor.

5. (currently amended) A method for installing an ignition module for a gas-fired burner to an isolation transformer of an electrical system, the isolation transformer including a primary winding and a secondary winding, the secondary winding coupled to an electrically isolated neutral conductor, the electrical system including a phase conductor, a neutral conductor and a ground conductor, the burner connected to the ground conductor, the ignition module including first and second inputs and at least one output, said method comprising:

connecting the transformer secondary winding to the first input of the ignition module;

connecting the transformer secondary winding to the ground ~~conductor~~;
~~and~~ conductor;

connecting the second input of the ignition module to the ground
~~conductor~~ conductor; and

creating a return path for passing a current via a flame output from the burner and via the ground conductor to the electrically isolated neutral conductor.

6. (original) A method in accordance with Claim 5 further comprising connecting the primary winding to the phase conductor and the neutral conductor.

7. (currently amended) An ignition system comprising:

a burner for producing a flame;

a power supply;

an electrical system comprising a ground conductor coupled to said burner;

an ignition module comprising a first input, a second input, and a single output, said output operatively coupled to said burner, one of said inputs coupled to said ground conductor, the other of said inputs coupled to said power ~~supply~~; and supply;

an isolation transformer connected in series between said power supply and said ignition ~~module~~; module;

an electrically isolated neutral conductor coupled to said ignition module and said isolation transformer; wherein said ground conductor configured to provide a return path that passes a current from a flame output from said burner to said electrically isolated neutral conductor.

8. (canceled)

9. (previously presented) An ignition system in accordance with Claim 7, said isolation transformer comprising a secondary winding, said secondary winding connected to said first input of said ignition module and connected to said ground conductor.

10. (previously presented) An ignition system in accordance with Claim 9, said transformer comprising a primary winding, said electrical system further comprising a phase conductor and a neutral conductor, said primary winding coupled to said phase conductor and to said neutral conductor.

11. (currently amended) An ignition system comprising:

a gas burner;

an AC power supply comprising a phase conductor and neutral conductor;

an electrical system comprising a ground conductor coupled to said burner;

an isolated neutral conductor;

an isolation transformer comprising a primary winding and a secondary winding, said primary winding connected to said phase conductor and to said neutral conductor, said secondary winding ~~comprising~~ coupled to an isolated phase conductor and an and said isolated neutral conductor; and

an ignition module comprising a first input, a second input, and an output, said output electrically connected to an igniter, said ignition module coupled in series with said isolation transformer, wherein one of said inputs coupled to said isolated neutral conductor, the other of said inputs coupled to said isolated phase conductor, said ground conductor coupled to said isolated neutral conductor between said ignition module and said isolation ~~transformer-transformer~~, and said ground conductor configured to provide a return path that passes a current from a flame output from said burner to said isolated neutral conductor.

12. (original) An ignition system in accordance with Claim 11, said secondary winding further coupled to said ground conductor.

13. (previously presented) A method in accordance with Claim 1, the electrical system including a junction box, said method further comprising connecting the isolation transformer between the junction box and the ignition module.